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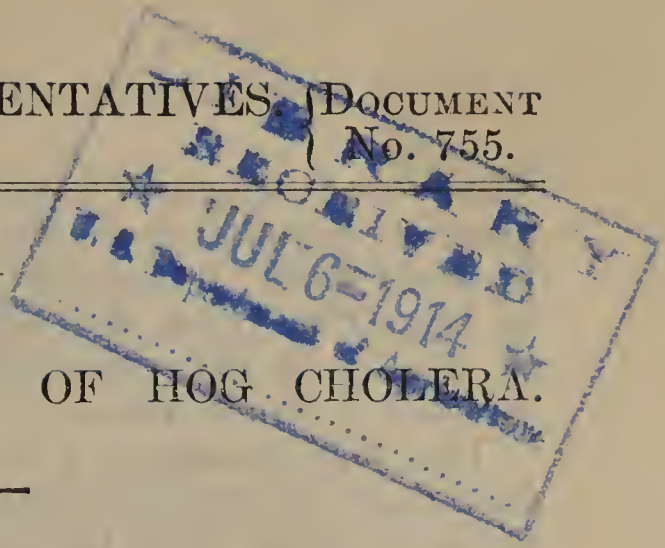
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## PREVENTION AND ERADICATION OF HOG CHOLERA.

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REPORT ON THE PLAN OF WORK, THE RESULTS SECURED, AND  
THE MONEY EXPENDED BY THE DEPARTMENT OF AGRICULTURE  
IN DEMONSTRATING THE BEST METHOD OF PREVENTING AND  
ERADICATING HOG CHOLERA.

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FEBRUARY 19, 1914.—Ordered to be printed.

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DEPARTMENT OF AGRICULTURE,  
OFFICE OF THE SECRETARY,  
Washington, D. C., February 11, 1914.

Hon. R. L. DAUGHTON,  
*Chairman Committee on Expenditures  
in the Department of Agriculture,  
House of Representatives.*

SIR: In accordance with your request of the 4th instant, I take pleasure in submitting herewith a report on the plan of work, the results secured, and the money expended by the Department of Agriculture in demonstrating the best methods of preventing and eradicating hog cholera, in accordance with the provision contained in the act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1914.

Very respectfully,

BEVERLY T. GALLOWAY,  
*Acting Secretary.*

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REPORT ON THE PLAN OF WORK, THE RESULTS SECURED, AND THE MONEY EXPENDED  
BY THE DEPARTMENT OF AGRICULTURE IN DEMONSTRATING THE BEST METHOD OF  
PREVENTING AND ERADICATING HOG CHOLERA, JULY 1, 1913, TO JANUARY 1, 1914.

The act making appropriations for the fiscal year ending June 30, 30, 1914, contains the following provision:

General expenses Bureau of Animal Industry: \* \* \* for inspection and quarantine work \* \* \* \$654,000: *Provided*, That of this sum not less than \$75,000 shall be set aside for demonstrating the best method of preventing and eradicating hog cholera.

This report is intended to set forth briefly the plan adopted, the results secured, and the expenditures incurred from July 1, 1913, to January 1, 1914.

By way of explanation it should be stated that up to the 1st of July, 1913, the Department of Agriculture had undertaken no regular field experiments in connection with the eradication of hog cholera.



Therefore it was necessary, subsequent to that date, when the appropriation became available, to organize a force of trained inspectors for field work, to instruct these inspectors in their new duties, and to largely increase the very limited facilities for serum preparation at the small experimental farm rented by the department in the vicinity of Ames, Iowa.

The plan adopted was to select certain areas in several of the important hog-raising States and to undertake to control hog cholera in these areas, with the cooperation of the proper State authorities. The work has been located at Ames, Iowa, where the necessary anti hog-cholera serum was produced, and in Dallas County, Iowa; Montgomery County, Ind.; Pettis County, Mo.; and Johnson and Gage Counties, Nebr., each of the areas last named being selected as suitable for demonstrating the best method of preventing and eradicating hog cholera.

Work was actually begun in Dallas County, Iowa, on July 1, 1913; in Montgomery County, Ind., on July 15, 1913; in Pettis County, Mo., about August 1, 1913; and in Johnson and Gage Counties, Nebr., about November 1, 1913. The work in the last-named area has been merely preliminary and has consisted simply in survey and organization work. Therefore this area will not be further considered here.

#### METHOD OF PROCEDURE.

The field work may be grouped under three heads:

1. *Education and organization of the farmers, and survey of the experimental area.*—The department has depended largely upon the State college in each case to carry on this work, though considerable assistance has been rendered by inspectors in the Bureau of Animal Industry.

2. *The enforcement of necessary sanitary and quarantine regulations.*—This portion of the work has been in each State assigned to either the State live-stock sanitary board or to the State veterinarian, depending upon conditions in the different States. Here again Bureau of Animal Industry inspectors have assisted State authorities in formulating regulations and in enforcing them.

3. *Application of the antihog-cholera serum.*—In so far as possible the Bureau of Animal Industry has supplied from its plant at Ames, Iowa, the serum needed in the work and all serum used in connection with its experiments has been administered by inspectors of the Bureau of Animal Industry.

#### ORGANIZATION.

##### I. UNITED STATES DEPARTMENT OF AGRICULTURE.

(a) *Administrative.*—The general administration of all of the work has been under the direction of the Chief of the Bureau of Animal Industry, United States Department of Agriculture.

(b) *Field force.*—In each county there has been placed one veterinary inspector in charge, two assistant veterinary inspectors, and a clerk. When necessary an additional inspector's assistant has been assigned also to field work.

(c) *Laboratory force* (stationed at Ames, Iowa).—One inspector in charge, with three assistant inspectors, a clerk, and laborers. This force is engaged in the production of anti hog-cholera serum.



## II. NONDEPARTMENTAL.

(a) *State officials*.—One, and in many cases two, men have been assigned by State colleges to spend a limited amount of time in the experimental area for the purpose of organizing farmers, making a survey of the conditions of hog raising, and carrying on a general educational campaign.

(b) *Volunteer assistants*.—This force has consisted of intelligent farmers throughout the counties under experiment, who have volunteered their services to assist in gathering information, and in keeping the Federal inspectors advised of local conditions.

The above indicates in a general way the plan adopted and the forces which have been finally organized for demonstration experiments. As the appropriation was not available until July 1, 1913, the assembling of inspectors and their assistants, and the expansion of the serum plant at Ames, including the enlargement of the temporary buildings, the construction and rearrangement of pens for hogs, and the purchase and installation of additional equipment were necessarily delayed until after that time. Hog cholera is most prevalent in the summer and fall months. The late start, therefore, resulted in the disease being widespread in all of the experimental areas when the work was begun. This placed the inspectors at a great disadvantage because the need for serum and the necessity for instructing and advising farmers were at their maximum at the beginning of the work when the department was naturally least able to cope with the situation. Notwithstanding these difficulties, very gratifying results have been secured.

In order to indicate in a general way the effectiveness of the serum treatment, and to show the results accomplished in the way of the limitation of the disease, the following tables are submitted:

TABLE I.—*Report of treatment of hogs in infected herds.*

	Hogs.	Died.
GROUP A.		
Approximately 70 per cent sick when treated:		
Pettis County, Mo.....	5,904	1,038
Montgomery County, Ind.....	4,562	891
Dallas County, Iowa.....	5,686	1,998
Total.....	16,152	3,930
Per cent loss.....		24.3
GROUP B.		
Well when treated, but kept in herds with sick hogs:		
Pettis County, Mo.....	0	0
Montgomery County, Ind.....	4,961	119
Dallas County, Iowa.....	6,815	224
Total.....	11,776	243
Per cent loss.....		2.9

TABLE II.—*Report on treatment of hogs in healthy herds exposed to hog cholera.*

	Hogs.	Died.
Pettis County, Mo.....	5,802	12
Montgomery County, Ind.....	4,527	53
Dallas County, Iowa.....	3,149	16
Total.....	13,578	81
Per cent loss.....		0.5+



TABLE III.—*Losses in 3 counties in 1911, 1912, and 1913.*

Years.	Dallas County.			Pettis County.			Montgomery County.		
	Hogs raised.	Hogs lost.	Per cent of loss.	Hogs raised.	Hogs lost.	Per cent of loss.	Hogs raised.	Hogs lost.	Per cent of loss.
1911.....	77,274	11,337	12.7	62,590	13,740	18.0	73,920	20,414	21.6
1912.....	84,618	19,821	18.9	59,661	20,550	25.6	74,554	23,982	24.8
1913.....	118,550	9,182	7.1	59,792	10,376	14.7	75,974	5,098	6.2
Before July 1, 1913.....		5,289			9,035				
After July 1, 1913.....		3,893			1,341				

Tables I and II show the total number of hogs treated, together with the results of the treatment. Table I deals with herds which were affected with hog cholera when first visited by inspectors. The hogs in these herds have been divided into two groups. Group A, Table I, consisted largely of hogs which were sick at the time of treatment. Inspectors' reports show that of these hogs approximately 70 per cent were sick of hog cholera when treated. Notwithstanding this fact, only 24.3 per cent of these animals were lost, whereas without the use of the serum it is probable that more than 75 per cent would have succumbed. Group B, Table I, represents well hogs, although they were in herds with sick hogs at the time of treatment. Among these, only 2.9 per cent were lost, whereas a loss of more than 75 per cent was to be expected without the serum treatment.

Table II gives the results of the treatment of hogs on farms adjacent to outbreaks of hog cholera. These hogs were all exposed to the disease and under normal conditions without preventive treatment a large percentage would no doubt have died of hog cholera. As a result of the treatment the loss was practically negligible, being only slightly in excess of one-half of 1 per cent.

Tables I and II therefore show quite clearly the effectiveness of the serum treatment, and they show that this treatment is of especial value as a preventive agent.

Table III is based upon statistics secured by a farm-to-farm survey of the three counties under experiment. The figures given are not absolute, but are based upon reports secured from more than 75 per cent of farms in each area. It will be noted that in each county the loss in 1913 was materially less than that which occurred in either 1911 or 1912. By referring to the figures given for Dallas County, Iowa, and Pettis County, Mo., it will be noted that by far the greater proportion of hogs which died in these counties in 1913 was lost before July 1, 1913, and therefore before the department's work was begun. Under similar conditions the losses should have been much greater during the last six months of the year than they were during the first six months. The marked diminution in the losses after the department's work was instituted is most encouraging and indicates clearly the good results following the efforts to control the disease in the counties mentioned. The figures for losses before and subsequent to July 1 in Montgomery County, Ind., are not available. They would undoubtedly show similar conditions.



## EXPENDITURES.

The expenditures for the period July 1, 1913, to January 1, 1914, were as follows:

*Statement of expenditures from the appropriation "General expenses, Bureau of Animal Industry, 1914 (demonstrating method of preventing and eradicating hog cholera)," from July 1 to Dec. 31, 1913.*

## ADEL, IOWA.

Salaries.....	\$2, 600. 00
Travel and station reimbursement.....	399. 61
Equipment and apparatus.....	699. 60
Maintenance, automobile, etc.....	147. 40
Miscellaneous.....	66. 73
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## AMES, IOWA, LABORATORY.

Salaries.....	5, 309. 84
Travel and station reimbursement.....	829. 95
Equipment and apparatus.....	1, 296. 37
Forage, etc.....	2, 571. 68
Hogs.....	12, 847. 26
Miscellaneous.....	1, 844. 79
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	24, 699. 89
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## BEATRICE, NEBR.

Salaries.....	300. 00
Travel and station reimbursement.....	91. 74
Miscellaneous.....	45. 50
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	437. 24
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## CRAWFORDSVILLE, IND.

Salaries.....	3, 385. 00
Travel and station reimbursement.....	542. 46
Equipment and apparatus.....	1, 341. 13
Maintenance, automobile, etc.....	346. 00
Miscellaneous.....	45. 49
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## SEDALIA, MO.

Salaries.....	2, 428. 34
Travel and station reimbursement.....	676. 76
Equipment and apparatus.....	816. 54
Maintenance, automobile, etc.....	243. 35
Miscellaneous.....	67. 46
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## WASHINGTON, D. C.

Salaries.....	190. 00
Travel and station reimbursement.....	156. 93
Equipment and apparatus.....	654. 56
Miscellaneous.....	4. 20
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Grand total..... 39, 948. 69

In explanation of the above statement of expenditures, the total amount expended to January 1, 1914, does not, of course, include the encumbrances which must be charged against the appropriation to maintain the work during the last six months of the fiscal year. These encumbrances include salaries, authorizations for travel, and station expenses. A statement from the accounting officer shows that the appropriation of \$75,000 was on January 1, 1914, encumbered to the amount of \$62,054.27. This encumbrance includes no provision for the maintenance of the station at Ames, Iowa, for the last six months of the fiscal year. The record for the first six months shows that the expenditures, exclusive of salaries at that station, have approximated \$3,000 per month. It is clear that the fund of \$75,000 will not suffice to maintain the station at Ames for the last six months of the fiscal year and at the same time meet the encumbrances now charged against it.

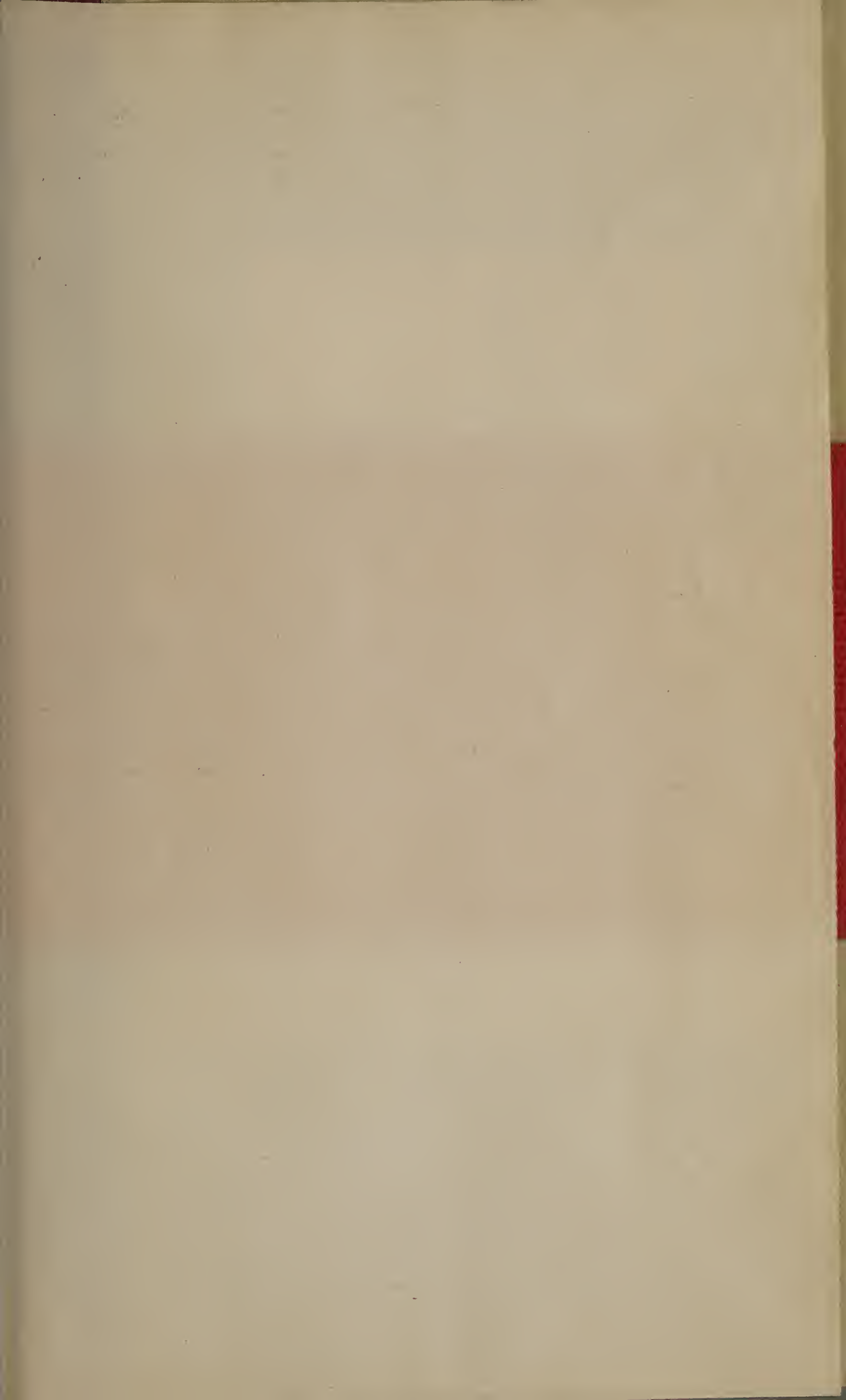
It is estimated that the cost of the work per county will average about \$20,000 per annum, although this rate of expenditure will be exceeded this year on account of the unusual expense incident to the equipment of the serum plant and the other organization expenses. In determining this cost the expenses of the serum-producing plant at Ames must be apportioned between the three field stations, viz, Adel, Iowa; Sedalia, Mo.; and Crawfordsville, Ind., which have used the serum.

In explanation of the expenditure of \$12,847.26 at Ames, Iowa, for hogs, attention is directed to the fact that the Ames station has been used almost exclusively to produce the serum needed in the work, and the chief expense in this serum production is for hogs which are utilized to furnish hog-cholera virus.

Large numbers of hogs were also required for use as serum producers, these being treated with virus obtained from hogs infected with the disease.











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